

*The Contributions of the Second Auxiliary Surgical Group to Military Surgery During World War II with Special Reference to Thoracic Surgery**†

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The outstanding scientific and surgical accomplishments of the Second Auxiliary Surgical Group in the Mediterranean Theater of Operations and the 7th Army in World War II were not exceeded by any other group in the United States Army Medical Corps. In the final 921-page report to the Surgeon General with 550 tables, 8801 severely wounded casualties out of a total of 22,000 treated were reviewed. In addition, the major portion of three books on war surgery and over 60 scientific articles were written by this group. The contributions in thoracic surgery that focused attention on physiologic principles and limited the indications for thoracotomy have stood the test of time. The author made the original description of the reaction of the lung to severe trauma of the brain, abdomen, and extremities by the development of "the wet lung of trauma" (RDS), while his introduction of a hand-operated, intermittent positive pressure oxygen respirator to treat the advanced form of this syndrome (pulmonary edema) ushered in a new form of treatment. Long-term, follow-up studies by the author confirm the validity of the physiologic approach to the treatment of thoracic trauma.

IT IS INDEED a privilege and an honor to present the First Annual Second Auxiliary Surgical Group (2nd ASG) Distinguished Lecture at this, the First Annual U.S.U. Surgical Associates Day of the Uniformed Services University of the Health Sciences School of Med-

* Presented as the First Annual 2nd ASG Distinguished Lecture on the First Surgical Associates Day of the Uniformed Services University of Health Sciences School of Medicine, (USUHSSM), Bethesda, Maryland, on Friday, April 3, 1981.

† This communication is concerned with the principles and practice of surgery evolved in the Mediterranean Theater of Operations (MTO) by members of the 2nd ASG which were also employed in the 7th Army when it invaded So. France to serve in the European Theater of Operations (ETO). The MTO methods of triage, surgical care, and evacuation of casualties differed considerably from those practiced in the ETO.

The opinions expressed by the author on military surgery are those of the author and do not necessarily reflect those of the U.S. Army, U.S. Navy, U.S. Air Force, or the Department of Defense.

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icine (USUHSSM). The 2nd ASG is close to my heart, for the bonds of friendship hammered out on the anvil of front-line medical military service are as lasting as if they were forged in steel. No other medical unit in World War II exceeded this group in the number of seriously wounded battle casualties treated, the quality of surgical care, or in the number and importance of their contributions to military surgery. Of these contributions, those in thoracic surgery were far reaching, for they focused attention on physiologic principles that have stood the test of time in Korea and Vietnam and are currently in use today.

Founding and Early History of the 2nd ASG

In May 1942, the 2nd ASG was the first auxiliary surgical group to be formed, under the command of then Lt. Colonel James E. Forsee (Fig. 1). The selection of the surgeons of this group was done by Dr. Frederick Rankin. An initial contingent of 30 officers and corpsmen embarked from Camp Kilmer on November 2, 1942 for the Mediterranean Theater of Operations (MTO) for the Tunisian Campaign. Finally, in February 1943, the main cadre of the group left Camp Kilmer to depart unescorted on the S.S. Andes for North Africa. This fast vessel fortunately survived a submarine attack by sailing below the equator, arriving in Casablanca, Morocco five days late.

Thoracic Surgeons in the MTO

Dr. Evarts A. Graham, Chairman of the Surgical Committee of the National Research Council, ahead of his time, included thoracic surgical teams for the roster of the 2nd ASG. Five well-trained thoracic surgeons (rare birds in those days), Doctors Reeve H. Betts, Tho-

mas H. Burford, Paul C. Samson, Lawrence H. Shefts, and the author, were chosen for the 2nd ASG. In addition, Doctors Hiram Langston of the 12th General Hospital, William Tuttle of the 36th General Hospital, and Paul Sanger of the 38th Evacuation Hospital, also made valuable contributions to thoracic surgery in the MTO.

The First Thoracic Surgery Center in the MTO, Bizerte, Tunisia, July 15, 1943

On reporting for duty in the USAMC on September 4, 1942 at Letterman General Hospital, the author was appointed Chief of "Septic Surgery" which included thoracic surgery. This proved to be a powerful challenge for him to demonstrate to the USAMC in WW II that thoracic surgery was a bonafide specialty. Finally, after months of argument, Drs. Burford, Samson, and the author, thoracic surgeons of the 2nd ASG, persuaded the headquarters' surgeons of the NATOUSA to grant this trio permission to set up a Thoracic Surgery Center on a trial basis.

Surgical Management of Chest Wounds Prior to World War II

In the Civil War, all chest wounds were hermetically sealed which, although it avoided problems of the open pneumothorax, locked in infection that resulted in a 62.6% mortality rate on penetrating wounds. By the time that WW I occurred, aseptic surgery, operations of the abdomen and extremities, were well developed, but thoracic surgery was still in its infancy. Thus, although there was improvement in the treatment of chest wounds in WW I as compared with the Civil War, mortality was a still substantial 24.5%. The emphasis in the management of chest wounds in WW I centered on the pleural cavity: when, where, and how to drain, etc. Between WW I and WW II, considerable strides were made in thoracic surgery. Early in 1942 at the request of the National Research Council, Drs. F. S. Dolley and L. A. Brewer made a series of teaching motion pictures to instruct army medical officers in physiologic principles of the treatment of chest wounds. A supplement, published in the *Annals of Surgery*,¹ stressed rapid re-establishment of the function of the heart and lungs by simple measures. However, these physiologic principles had not been widely tested or accepted.

Contributions to Thoracic Surgery at the Thoracic Surgery Center, Bizerte, Tunisia, MTO

On July 15, 1943, this first chest center in the USAMC was established at the 53rd Station Hospital under desert conditions about 30 miles from Bizerte to treat casualties

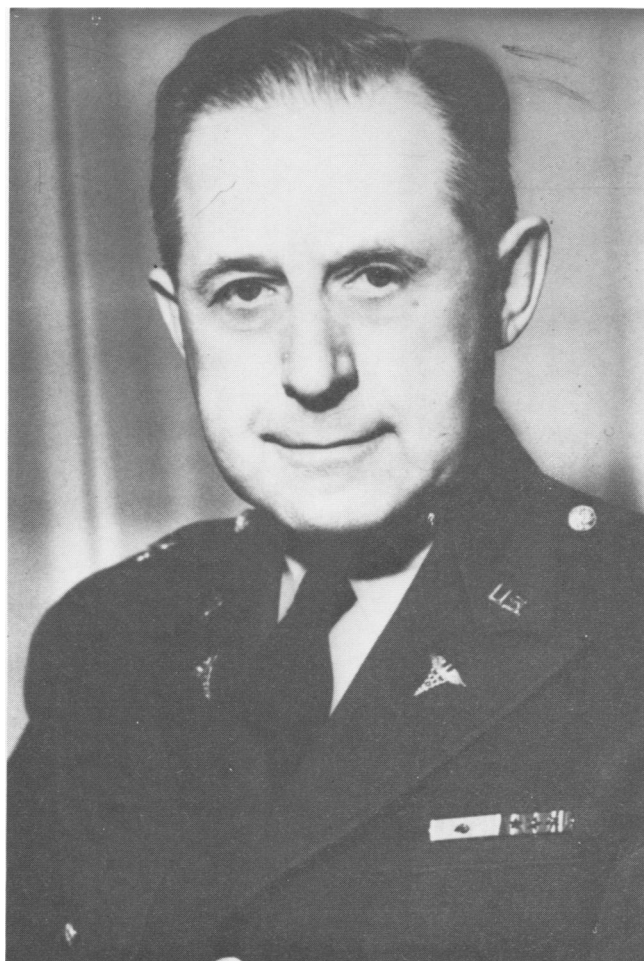


FIG. 1. Col. James M. Forsee, Commanding Officer of the 2nd ASG. In his dedication to excellence in patient care and academic contributions to war surgery, he was responsible for much of the professional accomplishments of his command. Although his very conservative temperament was at times completely out of tune with his high-spirited officers, nevertheless no other medical unit in the USAMC contributed more to war surgery than the 2nd ASG (personal photograph of the author).

from the Sicilian Campaign.* Because of the official skepticism of the USAMC, Drs. Burford, Samson, and the author were on their mettle to prove that well-trained thoracic surgeons could lower the current high mortality rate for chest wounds (CW). Three important advances were made in the base section management of chest wounds²: 1) treatment of organizing hemothorax and

* It is of interest that Colonel Churchill (Fig. 2) was lukewarm to this plan. At the Massachusetts General Hospital on his surgical service, because of his eminence in thoracic surgery, the general surgical residents were well trained in the principles of thoracic surgery. Thus, he believed the well-trained general surgeon could operate upon the chest. This was true of his residents, but it was not a universal attribute of general surgeons, as will be seen later on.



FIG. 2. Col. Edward D. Churchill, Professor of Surgery at Harvard Medical School. He served as Consultant in Surgery in the MTO. A brilliant educator and surgeon, he stimulated many advances in war surgery in his theater of operation. With a keen understanding of the mission of the 2nd ASG, he was particularly helpful in seeing that the surgical teams were employed for maximum care of the wounded. We were fortunate to have such a distinguished leader in surgery as Consultant Theater Surgeon (reprinted from Excelsior Surgical Society Roster with permission of the Secretary, Dr. H. T. Ballantine, Jr.).

hemothoracic empyema, with the "rediscovery" and refinement of the operation of pulmonary decortication; 2) surgical management of intrathoracic metallic foreign bodies; and 3) the introduction of penicillin as a powerful antibiotic in the treatment of pleural, pulmonary, and bloodstream gram-positive infections in the USAMC.

Decortication for Organizing Hemothorax and Hemothoracic Empyema

Although decortication was first performed by Fowler as far back as 1893, this operation was not generally used prior to WW II. The recognition that fibrin is laid down parallel to the plane of the visceral pleura to become an organized membrane or "peel" on a relatively

normal pleura, made the operation of decortication or "unpeeling" of this pleural membrane a reasonable procedure. The erroneous term "thickened pleura," commonly used to describe the pleura in these cases, simply did not reflect the true pathology. By peeling off of this membrane, a glistening, pliable pleura was usually found that permitted the "captive lung" to expand with improvement in pulmonary function. In over 100 cases, there was no mortality from this operation, and expansion of the lung was almost always achieved. Based on the above wartime experience, this operation was introduced to treat chronic empyemas of both granulomatous and pyogenic etiology in civilian life following WW II.

Intrathoracic Foreign Bodies

At the beginning of WW II, in the USAMC, there was no definite policy on the management of metallic intrathoracic foreign bodies (FB). To identify the exact location of a FB, the technique of taking posterior/anterior and lateral chest roentgenograms superimposing square grids drawn on each film accurately placed the FB in the lung, the mediastinum, or the chest wall. The following policy was gradually adopted: Metallic foreign bodies that were "symptomatic," *i.e.*, causing hemorrhage, air leak, esophageal perforation or infection, or over 1.5 cm in size; and those FBs close enough to the heart, great vessels, the major airways, or esophagus to be the source of potential perforation should be electively removed. The fate of the smaller FB was not determined at the center. Follow-up studies (up to 17 years) subsequently carried out by the author³ in 102 cases with small (less than 1.5-cm) FBs that had not been removed in the War Zone, revealed only one needing removal in the Zone of Interior because of the air leak. The earlier unproven policy was thus vindicated.

First Use of Penicillin in War Casualties in the MTO

On July 28, 1943, a casualty with a chest wound with a hemolytic *staphylococcus aureus* empyema, multiple lung abscesses, and septicemia, was successfully treated with small doses of penicillin (50,000 Florey units Q 6 h).⁴ Although careful debridement of devitalized tissue remained the cornerstone of treatment in the management of all wounds, penicillin was later proven to be a powerful addition to the wartime surgeons' armamentarium.[†]

† In concluding this brief history of the original chest center, Bizerte, Tunisia, acknowledgment must be made to the great contributions that my outstanding colleagues, Majors Burford and Samson made to the success of this clinical program, which proved to be the opening bit of evidence to the USAMC that thoracic surgery was a bona fide specialty. In the postwar era, Drs. Burford and Samson went on to brilliant careers, as did the other thoracic surgeons in the 2nd ASG, Drs. Betts and Shefts.

Forward Thoracic Surgery—Italy, 1943–44; France and Germany, 1944–45

At the Bizerte Chest Center, it was apparent that the management of thoracic wounds in the forward hospitals was unsatisfactory. Colonel Churchill, Consultant Surgeon, MTO (Fig. 2), was convinced that this was an important problem to be solved, and on September 5, 1943, he detached the author from the chest center on a special assignment on the invasion of Italy to work out the initial management of war wounds of the chest. After months of work, in November 1943, the first allied military medical meeting on the European mainland in WW II was held in the rococo Royal Theater of the Kings Palace, Caserta, Italy. There the author presented 90 cases treated by a physiologic and more conservative regimen of treatment than had been previously employed in the 5th Army forward hospitals. Unfortunately, my presentation started a series of confrontations between me and the consulting general surgeon to the 5th Army who believed that thoracotomy was the basic operation to be employed as the initial surgical procedure in the management of the great majority of chest wounds. In contrast, the author was convinced of the importance of rapidly restoring the function of the traumatized lungs and hearts, which most often could be done by simple measures, and not the cleaning out of the pleura, which had been the main focus of the treatment of chest wounds in WW I.

In March 1944, Colonel Churchill called a meeting to decide on the indications for thoracotomy. The overall mortality rate of the author's conservative physiologic regimen, particularly in cases showing the "wet lung syndrome" (discussed later), was clearly much lower than that of the more radical extended thoracotomy approach of the consulting surgeon of the 5th Army. The limited indications for initial thoracotomy were accepted for the 5th Army medical corps (Table 1).⁵ From this time on, the 5th Army directives clearly restricted the performance for thoracotomy to these carefully defined types of wounds.

On August 15, 1944, the 7th Army of the MTO established a beachhead in Southern France. Col. Frank B. Berry served as Consultant Surgeon (Fig. 3). A typical Field Hospital is seen in Figure 4. The author's thoracic

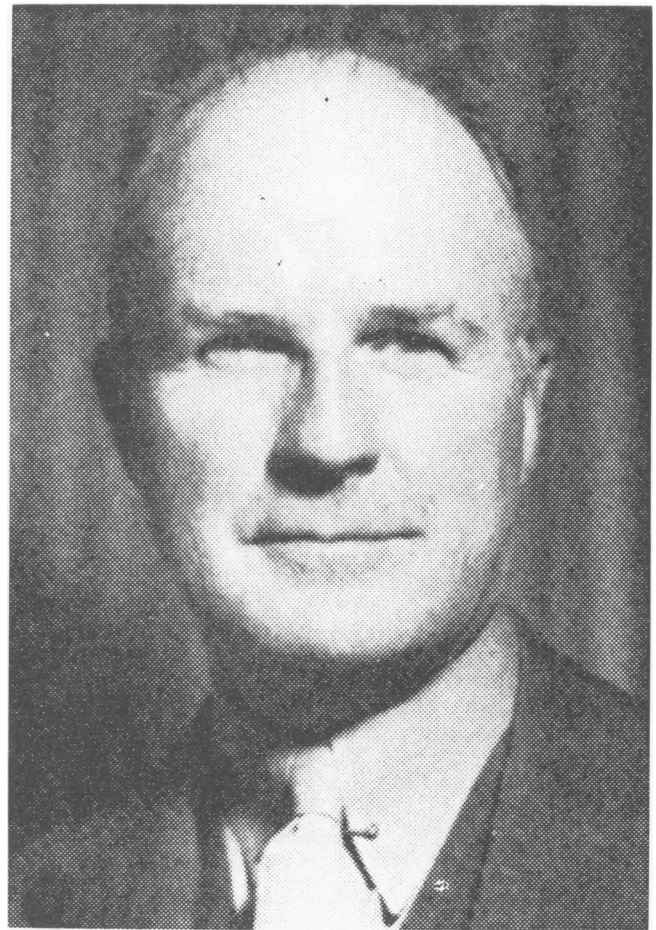


FIG. 3. Col. Frank B. Berry, Professor of Surgery at the College of Physicians and Surgeons of Columbia, became 7th Army Consultant Surgeon on the invasion of Southern France. His in-depth knowledge of surgery and his personal concern for the surgeons of his command made him an ideal consultant. A pioneer thoracic surgeon at Bellview Hospital, New York City before WW II, he was most attentive to our efforts to improve the care of thoracic wounds. After WW II, his superior talents were recognized by the Army when he became the first physician to be appointed Asst. Secretary of Defense (reprinted from Excelsior Surgical Society Roster with permission of the Secretary, Dr. H. T. Ballantine, Jr.).

surgical team, assigned to the 11th Field Hospital, supported the advance to the Vosges Mountains in Northern France where it stalled in the winter. The spring offensive brought our team to Germany and Austria, where the war in the ETO ended.

Nonpenetrating wounds were treated by limitation of fluids in blast cases and the introduction of intermittent positive pressure breathing (IPPB) (discussed later). The aspiration of mucous, blood and vomitus, by re-establishing the airway through transnasal bronchial suction and bronchoscopy, was frequently life saving.

The physiologic approach to the treatment of penetrating chest wounds centered on the proper emergency measures,⁶ diagnosis,⁷ and resuscitation.⁸ The manage-

TABLE 1. *Indications for Thoracotomy in Penetrating Chest Wounds*

After Cardiothoracic Stabilization
1. Continued bleeding (severe)
2. "Traumatic" thoracotomy (large sucking wound)
3. Thoracoabdominal wound
4. Miscellaneous
a. heart or esophagus repair
b. trachea or bronchus repair
c. foreign body over 2 cm

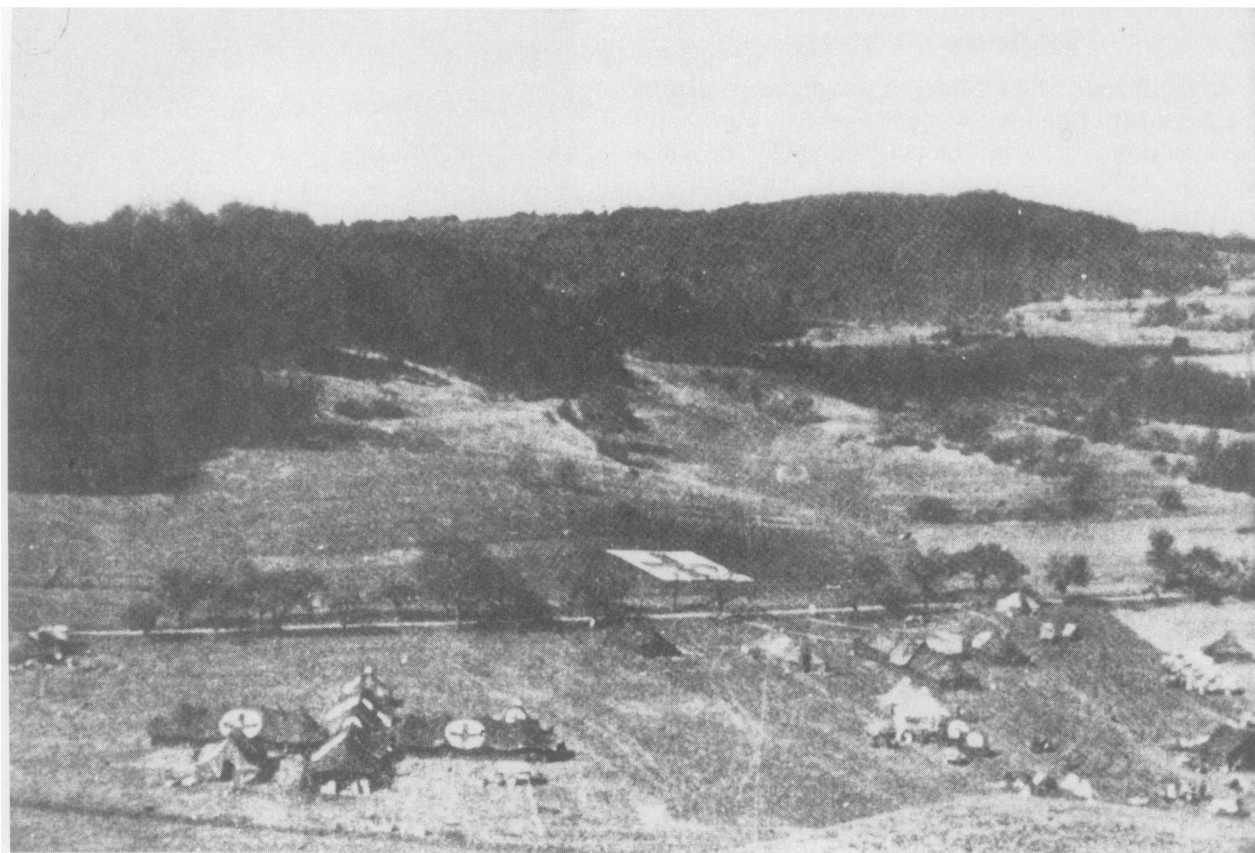


FIG. 4. Aerial view of 11th Field Hospital, 7th Army, Northern France, 1944, seen on the left. The 7th Army utilized its field hospitals in the same manner as the MTO, locating them "a litter carry away" from the clearing station, viewed on the right. The field hospital surgeons (2nd ASG) were responsible for treating all the nontransportable casualties seen in the clearing station. Those needing emergency surgery had their operations performed after proper resuscitation. However, after March 1944, as mentioned in the text, when we placed strict limitations on the indications for thoracotomy, patients not needing major chest surgery would be resuscitated and when transportable were sent back to the evacuation hospitals. Studies on the "wet lung of war casualties" and other problems involved in the initial care of thoracic wounds herein recorded were made by us in this and other field hospitals (personal photograph of the author).

ment of chest pain, the treatment of anoxia, replacement of blood, and the recognition and treatment of the "wet lung in war casualties" (discussed later) were the keys to success⁸ (Table 2).

The "Wet Lung in War Casualties" (Respiratory Distress Syndrome)

Probably one of the most important contributions to thoracic surgery in WW II was the proof that the majority of chest wounds could be treated successfully by the physiologic approach with the use of relatively simple procedures and the precise limitations of the indications for thoracotomy⁵ (Table 3). The mortality rate of 1364 nontransportable cases of severe penetrating wounds of the chest treated by the surgeons of the 2nd ASG in WW II was 9.84%, which compares favorably with the overall WW I mortality of 24.5%.

The author and his associates first observed that the lung not only responded by an increase in fluid content

to pulmonary trauma,⁹ but also to major injuries to the brain, abdomen, and extremities as well. This observation added a new approach to the treatment of the severely wounded.¹⁰ Originally described as the "Wet Lung in War Casualties" (Fig. 5), it is now known as "Post-traumatic Respiratory Insufficiency" or "Respiratory Distress Syndrome" (RDS). Fluid persists in the lung as the result of complex causes.[‡] The resultant hypoxia and hypercarbia may cause a fatal outcome. A practical treatment was devised that involved making the cough effectual, transnasal bronchial aspiration or

‡ In WW II, the source of abnormal fluids in the lung was identified as blood from trauma, pulmonary transudates due to altered capillary permeability (anoxia, airway obstruction, shock), and increased mucous secretion secondary to thoracic injury. In addition, the painful or paradoxical chest wall, gastric distention, and coma resulted in ineffectual coughing and retention of these fluids. Since then, additional causes have been reported: increased pulmonary capillary pressure, microemboli, toxic agents, decreased surfactant, and others.

TABLE 2. *Cardiopulmonary Resuscitation*

1. Clear airway: transnasal catheter suction (bronchoscopy for aspirated material)
2. Administer oxygen by mask or intratracheal catheter
3. IPPB for advanced “wet lung” (RDS)
4. Replace blood loss—plasma only until blood transfusion available
5. Pack “sucking wound”
6. Aspirate or tube drainage hemothorax (does not increase bleeding!)
7. Aspirate or tube drainage pneumothorax
8. Control chest pain
 - a. intercostal nerve block
 - b. I.V. small dose of opiate

bronchoscopy, enhanced oxygenation of the blood, and correction of underlying deranged physiology that precipitated this dangerous condition.

The advanced state of the “Wet Lung in War Casualties” represented a form of pulmonary edema that, at that time, had not been previously described. Because positive pressure oxygen therapy was beginning to be successful in the treatment of other types of pulmonary edema,¹¹ the author was convinced that it would be useful in treating this new type of pulmonary edema. An effective machine to provide IPPB to open up collapsed alveoli and improve oxygen gradient between the alveolus and the pulmonary capillary was devised and assembled by the author at Cassino, Italy. On January 22, 1944 (Fig. 6), the author successfully employed this apparatus to treat a severely wounded casualty with pulmonary edema secondary to multiple severe thoracic and other wounds. The “wet lung of war casualties” occurred in 65 of 167 critically wounded patients treated by the author in field hospitals and followed to the base section hospitals.³ The successful outcome of these 65 patients with severe chest and multiple wounds was due to the physiologic regimens of treatment that have been presented, an important part of which was the IPPB treatment.§

Follow-up Studies on the Author’s Cases
in World War II

In the preparation of the *History of Surgery, Thoracic Surgery, WW II*, Vol. II, long-term, follow-up studies were carried out by the author on the cases treated by his thoracic surgery team in the forward hospitals during

§ In 1946 the author worked with V. Ray Bennett at Los Angeles County Hospital to convert an experimental device into an acceptable clinical IPPB machine. Since then, a number of elegant, automatic, both pressure and volume regulated apparati to administer positive pressure oxygen and to serve as respirators are now available. Currently, every major hospital in this country has a Department of Respiratory Therapy in which these IPPB machines are used to treat a variety of respiratory diseases. From the humble beginning of a simple hand-operated device, introduced in 1944 in Italy during WW II, a new discipline in medicine has arisen that is now widely practiced.

TABLE 3. *Chest Wounds with no Indication for Thoracotomy*

1. Small foreign body in lung or pleura
2. Hemothorax—evacuation of blood from pleural space and closed drainage with debridement of chest wall is not considered a thoracotomy
3. Laceration of lung in absence of continued leaking of air or blood
4. Contusion of lung not an indication for thoracotomy or resection—without persistent bleeding or air leak
 - a. Dual blood supply to lung and active lymph drainage results in effective absorption of even huge hematomata
 - b. Operate only for late complications

WW II.³ Of the over 1000 combat incurred wounds that the author cared for in WW II, 822 had wounds of the chest, and 372 were treated in forward hospitals. Follow-up was possible due to triplicate special field medical records that the author designed for use in the MTO. His personal copies were available up to 17 years later for this study.

Of a total of 327 cases with major chest wounds treated in the forward hospitals, only about half (163) of this group reported to the V.A. hospitals where it was possible to follow them from three to 17 years after injury.³ Over one half of the 163 patients who survived in the base section overseas hospitals (where they could be kept for fairly long periods of time) were returned to active duty (88 in the MTO and later 19 in the ZI). Following the war, those patients not reporting to the V.A. were presumably in better condition or were less worried about their wounds. The main problems were psychological, stemming from the wounding and involvement in the war. Almost all patients in the V.A. series had few, if any, chest symptoms with near-normal

THE “WET LUNG” IN WAR CASUALTIES
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AND
CAPTAIN CHARLES A. SCHIFF, M.C., A.U.S.
FROM THE 2ND AUXILIARY SURGICAL GROUP

EXPERIENCE gained in treating a large number of casualties in the Sicilian and Italian campaigns prior to July 1944, has shown the importance of the “wet lung” in reference to the morbidity and mortality of patients with wounds of the chest, brain and abdomen. The authors’ combined experience consisted in the management of over 770 casualties in which the chest wound was the primary concern as well as the thoracic complications that arose in over 3,000 other casualties of all types.

FIG. 5. Title page of the original publication of “Wet Lung in War Casualties” in the *Annals of Surgery* (1946). This was the first scientific article to point out that the lung developed an increased fluid content as the result of severe trauma to the brain, abdomen and extremities as well as the chest. Now known as “Post Traumatic Respiratory Insufficiency” or simply Respiratory Distress Syndrome (RDS) it is the most common cause of death in intensive care wards. Because of its importance in all severe trauma, a great deal of investigation has been focused on this syndrome in the past two decades (reprinted with permission of the *Annals of Surgery*¹⁰).



FIG. 6. The IPPB machine, devised by the author was first used January 22, 1944 at Cassino, Italy. A portable anesthetic device was modified to permit the delivery of positive pressure oxygen to distend the alveoli and force oxygen into the pulmonary capillary by the manual squeezing on the rubber bag. Although it was tedious and tiring for all members of our team, this technique was life saving in the treatment of the advanced form of "wet lung," i.e., pulmonary edema. The manometer in the foreground registered intramask pressure. We were concerned that if the pressure in the lungs was too high, the pulmonary veins would be collapsed. This effective pioneer machine has now been replaced by very efficient automatic pressure and volume regulated devices (personal photograph of the author).

chest roentgenograms and were leading normal, useful lives. These data offer strong proof of the validity of the principles and practices of the treatment of chest wounds that have been recorded in this report. These principles were adopted in the MTO and later successfully employed in Korea and Vietnam. The photograph depicting the extensive pleural and chest wall infections characteristic of the thoracic wounds of the casualties of WW I is in sharp contrast to their counterparts in WW II (Figs. 7A and B).

Further Contributions of the 2ND ASG to Military Surgery

Following victory in Europe (VE Day), the 2nd ASG surgical teams of the 7th Army returned in June 1945

to their headquarters in Riva, Italy. Studies of the duplicate charts of patients treated in the MTO and ETO were in progress by Majors Reeve Betts, Luther Wolfe, and others. Over 60 medical officers, including the author, spent the entire summer in this extensive review. The final bound volume of this study, *Forward Surgery of the Severely Wounded 2nd ASG 1942-1945*, consisted of 931 pages and 450 tables. This book is probably the most comprehensive summary of the treatment of battle casualties by one unit in the history of military medicine.^{11,12} Space does not permit a discussion of this extensive work. In addition, 25 surgeons in our group contributed nine out of ten chapters to the *Medical Department of the U.S. Army, Surgery in WW II General Surgery*,¹³ Vol. II, 417 pages. In *Surgery in WW II, Thoracic Surgery*,¹⁴ Vol. I, 394 pages, eight out of ten chapters were written by members of the 2nd ASG, Drs. Lyman A. Brewer III, T. H. Burford, and E. Doud. The initial surgery of chest wounds in the MTO and 7th Army was presented. And, finally, members of the 2nd ASG, Drs. Lyman A. Brewer III and T. H. Burford, contributed nine of 11 chapters of the *Surgery in WW II, Thoracic Surgery*,¹⁵ Vol. II, 615 pages. This volume contained a discussion of special types of chest wounds and follow-up studies of the authors discussed previously. The fact that the USAMC published these two volumes on thoracic surgery in WW II showed that our efforts in 1943 to have thoracic surgery accepted by the USAMC as a specialty had become a reality. Besides these academic accomplishments, 215 military awards were won by members of the group (Table 4). Although one third of our unit were wounded and received the Purple Heart, three members of our group were killed in action and one died overseas.¹² We honor their courage and sacrifice (Table 5).

Discussion

The history and accomplishments of the 2nd ASG clearly demonstrate that well trained surgeons with proper academic background and motivation can make significant contributions to the art and science of military surgery, even under the trying battle conditions of a field hospital (now called a Mobile Army Surgical Hospital). By placing the surgical teams under the command of the theater surgeon, they may be readily moved from the forward area to the base section, insuring efficient use of surgical manpower for patient care and

¹¹ A review of duplicate records of 8801 severely wounded casualties was made out of a total of 22,000 cases.

¹² In addition to the publications recorded here, there were 48 scientific articles concerning war wounds published in surgical journals that were based on the wartime surgical experience of the members of the 2nd ASG. Twenty-one other scientific reports were also made to the theater surgeon.

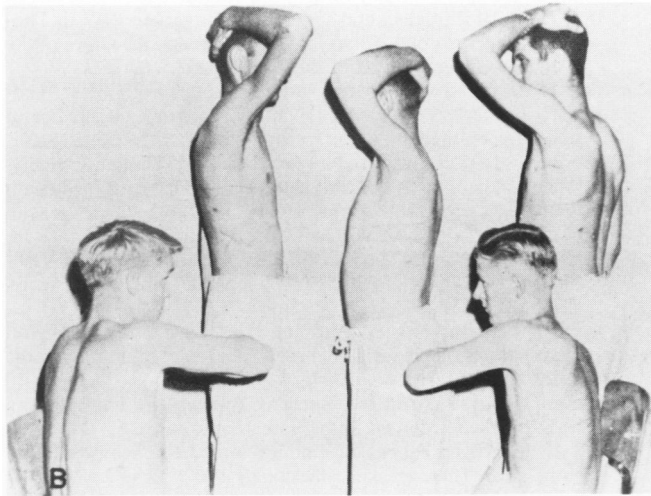
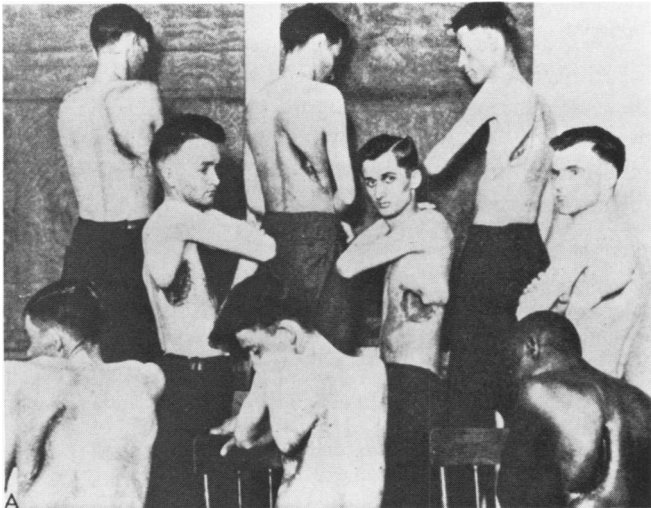


FIG. 7A and B. (A, above) World War I cases with chronic post-traumatic empyema treated by drainage and modified Schede thoracoplasties. These common and unfortunate sequellae of post-traumatic empyema in WW I shown above convinced the USAMC that Thoracic Surgery should be a subdivision of "Septic Surgery." (B, below) World War II cases of post-traumatic empyema who had been treated with primary pulmonary decortication. Recovery without complications or residual disability occurred in each of these cases. The reintroduction and refinement of the technique of decortication in WW II, as related in the text, was responsible for the dramatic improvement in the treatment of empyema and the rehabilitation of many casualties with major chest wounds such as these (reprinted with permission of the Surgeon General's Office of the USAMC).

scientific study. Ideally, the ASG should have the benefit of an academically oriented commanding officer. Such an officer was Colonel J. M. Forsee. Colonel Edward D. Churchill in the MTO and Colonel Frank B. Berry in the 7th Army in the ETO provided wise guidance and council. Free communication must be maintained between the forward and base section surgeons to permit follow-up studies on these war casualties. Time must be

TABLE 4. *Awards and Decorations of the 2nd Auxiliary Surgical Group, WW II—1942–1945*

Battle Campaign medals—9	Distinguished Service Cross	1
Meritorious Unit Citation—(excerpt) "... for superior performance of duty in management of the severely wounded ... Operating within artillery range, by performing surgery close to the field of battle ... resulted in saving of countless lives of American and Allied soldiers. ..."	Legion of Merit	16
... Hq. Fifth Army 9 April 1945	Silver Star Medal	4
	Bronze Star Medal	124
	Purple Heart Medal	38
	Honorary Order British Empire	1
	Medalhade de Guerra	1
	Fifth Army Commander Commendation	30
	Total (all types)	215

set aside for these military surgeons to assemble and digest clinical data.

Current Military Medicine

Until war is finally renounced, the United States will need a strong armed force to protect our country and our allies in the free world. An important part of this force is the Medical Corps. As Consultant for the Army and Navy in the post-WW II era, the author had been concerned about the peacetime problem of manpower in the USAMC.¹⁶ However, now there appears to be an answer to this problem. To provide a sufficient number of well-trained medical graduates for service in the armed forces, Congress in 1972 authorized the formation of the Uniformed Services University of Health Sciences School of Medicine (USUHSSM). This unique educational institution provides the medical student and graduate with exceptional advantages in their medical training. The cost of medical education is paid for by future service in the various medical corps. An adequate number of medical officers for the armed forces are now being provided as the result of the fact that these outstanding professional opportunities are being more generally appreciated.

Concluding Remarks

The contributions of the 2nd ASG in WW II, both in patient care and research, and the development of thoracic surgery under difficult battlefield conditions in

TABLE 5. *2nd ASG Casualties in WW II*

In Memoriam	
Members of the Second Auxiliary Surgical Group	
WW II 1943–1945 (MTO and ETO)	
Killed in Action:	Major John E. Adams MC Aus 2nd Lt. LaVerne Farquhar ANC Technician Fifth Grade Theron G. McCombs
Died in Service:	Technician Fifth Grade Ewaldt F. Hasenwinkel



FIG. 8. The author's surgical team is shown in this photograph taken at Mirecourt, France, January 1945. (left to right) Major Lyman A. Brewer III, Surgeon; 1st Lt. Virginia Elliott, surgical nurse; Capt. Werner F. A. Hoefflich, anesthetist; Capt. Charles A. Schiff, Assistant Surgeon. Not shown are Technical Sergeants John Martin and Keith Welborn. The courage of the entire team under fire, their patience, unswerving loyalty, and dedication to the ideal of improving the care of the wounded were major factors in the success of our surgical mission in WW II. The author would be remiss if he did not express his deep appreciation for the devoted support of his team-mates during the years 1943, 1944, and 1945 (personal photograph of the author).

the MTO and the 7th Army as recorded here, were unique in the history of military surgery. It was a great privilege to be associated with such a dedicated and talented group of surgeons, nurses, and corpsmen in the 2nd ASG who courageously worked countless long hours and under difficult conditions and made the contributions to war surgery herein reported. The opportunity was presented to the author and his team (Fig. 8) to contribute to the physiologic approach to the treatment of thoracic wounds with emphasis on the restoration of the function of the heart and lungs and not the pleura as in WW I; the limitation of the indications for thoracotomy; the introduction of a new syndrome, the "wet lung in war casualties" (RDS); and the development of a successful therapy with a new machine to deliver IPPB.

May the younger military surgeons be stimulated by

the chronicle of the activities of this surgical group in WW II to become involved in contributing to the art of military surgery. In closing, I would like to express my appreciation to the faculty of the USUHSSM for inviting me to present the history of this outstanding medical military organization and the development of thoracic surgery in the MTO and 7th Army in WW II.

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